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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/810,924	03/26/2004	Toni Kopra	P3567US00	9401
36671 7590 01/03/2011 DITTHAVONG MORI & STEINER, P.C. 918 Prince Street Alexandria, VA 22314				
EXAMINER SAMS, MATTHEW C				
ART UNIT 2617		PAPER NUMBER		
NOTIFICATION DATE 01/03/2011		DELIVERY MODE ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

docket@dcpatent.com

# Office Action Summary

## Application No.

10/810,924

## Applicant(s)

KOPRA ET AL.

## Examiner

MATTHEW SAMS

## Art Unit

2617

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 23 June 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-9, 12, 16-20, 22-27, 30, 35, 37, 38, 40 and 47-76 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 37, 38, 40, 47 and 56-70 is/are allowed.
- 6) ☒ Claim(s) 1-9, 12, 16-20, 22-27, 30, 35, 48-55 and 71-76 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of Papers Received (PTO-302)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/23/2010 has been entered.
2. Claims 1, 7-9, 12, 16, 17, 19, 20, 23-27, 30, 35, 37, 38, 40, 47-50 and 52 have been amended.
3. Claims 71-76 have been added.

### ***Information Disclosure Statement***

4. The information disclosure statements filed on 6/23/2010, 8/23/2010 and 12/7/2010 have been considered.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-9, 12, 16, 17, 22, 48-51, 53-54, 71-73, 75 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (US-6,990,453 hereinafter, Wang) in view of Epstein (US-6,735,560).

Regarding claim 1, Wang teaches an apparatus (Col. 7 line 67 through Col. 8 line 5) comprising:

- an interface configured to receive a media sample; (Fig. 1 [12] and Col. 5 line 36 through Col. 6 line 15)

- a processor configured to extract a first set of lower level but not higher level features from a media sample; (Col. 6 lines 14-34 and Fig. 1 [14])

- a transmitter configured to transmit the extracted first set of lower level but not higher level features; (Col. 6 line 61 through Col. 7 line 11 and Col. 8 lines 5-24)

- and inherently includes a receiver (Col. 7 line 67 through Col. 8 line 5 "mobile phone") that receives a notification as to identification of a media corresponding to the media sample from the remote service. (Col. 7 lines 57-59, Col. 16 lines 55-56 and Col. 17 lines 31-34)

Wang teaches the ability to have a sound "continually sampled into a buffer to obtain a record of the previous N seconds of sound" (Col. 21 lines 64-67), which enables multiple fingerprints to be created (Col. 22 lines 19-37) in order to increase the uniqueness of the file so that the song can be recognized (Col. 22 lines 1-17 & 38-50), with the apparatus performing the fingerprinting process (Col. 22 lines 29-33), but differs from the claimed invention by not explicitly reciting the receiver is for receiving a request message that requests at least one additional feature and the processor is automatically

responsive to the request message to extract a second set of features from the media sample and the transmitter is further to transmit the extracted second set of lower level but not higher level features for any necessary higher level feature extraction for matching in conjunction with the first and second sets of lower level features.

In an analogous art, Epstein teaches that it is well known in speech recognition systems, ambiguity in returned results can be solved by requesting additional information. (Col. 4 lines 25-27)

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to be motivated to implement the music identification system of Wang after modifying it to incorporate the ability to request additional information to resolve ambiguity of Epstein as an alternative to continually sampling and creating fingerprints of Wang since only performing the additional fingerprinting upon request saves processing power on the small portable device and reduces the amount of transmissions being sent to the recognition server, both of which save battery power of the small portable device, while still enabling less distinctive songs to be recognized.

*note:* the statement "for any necessary higher level feature extraction for matching in conjunction with the first and second sets of lower level features" is a recitation of an intended use of a process that is occurring at a "remote service". Therefore, intended use statement is not being given patentable weight because the "higher level feature extraction" is not occurring at the claimed "apparatus" and does not provide novelty to the apparatus by explaining how the second set of lower level

features is different from any other device capable of performing two lower level extractions.

Regarding claim 2, Wang in view of Epstein teaches the interface comprises a transducer. (Wang Col. 7 line 67 through Col. 8 line 5)

Regarding claim 3, Wang in view of Epstein teaches the transducer comprises a microphone and the media sample comprises an audio sample. (Wang Col. 5 lines 36-59, Col. 7 line 67 through Col. 8 line 5, Fig. 1 [12] and Col. 15 lines 25-58)

Regarding claim 4, Wang in view of Epstein teaches the transducer comprises a camera and the media sample comprises a visual sample. (Wang Col. 5 lines 36-59)

Regarding claim 5, Wang in view of Epstein obviously teaches the interface comprises one of a cable and a wireless link. (Wang Col. 7 line 67 through Col. 8 line 5 and Col. 15 lines 25-58)

Regarding claim 6, Wang in view of Epstein teaches the media sample that the interface receives is the digital version. (Wang Col. 15 lines 25-58)

Regarding claim 7, Wang in view of Epstein teaches the transmitter is further configured to transmit a message that includes the at least one extracted lower level but not higher level feature and no portion of a digital version of the media sample. (Wang Col. 4 lines 23-32 [LPC coefficients and frequency components of spectrogram peaks])

Regarding claim 8, Wang in view of Epstein teaches the processor is further configured to adaptively select a number of lower level but not higher level features to extract based on a digital version of the media sample. (Wang Col. 4 lines 23-32 [LPC coefficients and frequency components of spectrogram peaks])

Regarding claim 9, Wang in view of Epstein teaches the processor is further configured to adaptively select at least one type of feature to extract based on the digital version of the media sample, the processor extracts at least one feature of the adaptively selected type, and wherein the transmitter is further configured to transmit an identifier of the selected type of feature. (Wang 4 lines 15-41 and Col. 7 line 3 through Col. 8 line 24)

Regarding 12, Wang in view of Epstein teaches a user interface for causing the transmitter to transmit the first set of lower level but not higher level features, and a buffer to store at least a portion of the media sample, wherein the processor extracts at least some of the first set prior to a user input at the said user interface. (Wang Col. 21 line 57 through Col. 22 line 50)

Regarding claim 16, Wang in view of Epstein teaches a user interface (Wang Col. 5 lines 36-59 and Col. 7 line 67 through Col. 8 line 24) by which a single user input initiates:

the processor to extract the first set of lower level but not higher level features, a wireless communications link to be established between the apparatus and a communication service, and the extracted first set of lower level but not higher level features to be transmitted. (Wang Col. 6 line 61 through Col. 7 line 36 and Col. 7 line 67 through Col. 8 line 24)

Regarding claim 17, Wang in view of Epstein teaches the single user input further initiates a buffer disposed between the transducer and the processor to begin

storing at least a portion of the media sample. (Wang Col. 15 line 25 through Col. 16 line 2)

Regarding claim 22, Wang in view of Epstein teaches the request message specifically identifies each additional feature at least by type and the second set of features comprises only features of the said identified type. (Wang Col. 15 line 59 through Col. 16 line 2)

Regarding claim 48, the limitations of claim 48 are rejected as being the same reasons set forth above in claim 1.

Regarding claim 49, Wang in view of Epstein teaches the means for receiving a media sample comprises a transducer, and the means for extracting comprises a digital processor. (Wang Col. 7 line 12 through Col. 8 line 5 and Col. 15 lines 53-55)

Regarding claim 50, the limitations of claim 50 are rejected as being the same reasons set forth above in claim 1.

Regarding claim 51, Wang in view of Epstein teaches the sampling device is a phone or PDA (Wang Col. 7 line 67 through Col. 8 line 5) and it is obvious to one of ordinary skill in the art to recognize that a phone/PDA has buttons that can be configured to initiate the identification of media from the media sample.

Regarding claim 53, the limitations of claim 53 are rejected as being the same reason set forth above in claim 51.

Regarding claim 54, the limitations of claim 54 are rejected as being the same reason set forth above in claim 51.



Regarding claim 71, Wang in view of Epstein teaches the transmitter transmits and the receiver receives over a wireless communication link. (Wang Col. 7 line 67 through Col. 8 line 5)

Regarding claim 72, Wang in view of Epstein teaches the apparatus comprises a mobile station (MS). (Wang Col. 7 line 67 through Col. 8 line 5)

Regarding claim 73, Wang in view of Epstein teaches the receiver is configured to receive notification as to identification of a media corresponding to the media sample from the remote service. (Wang Col. 7 lines 57-59, Col. 16 lines 55-56 and Col. 17 lines 31-34)

Regarding claims 75 & 76, the limitations of claims 75 & 76 are rejected as being the same reasons set forth above in claim 73.

7. Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang in view of Epstein as applied to claim 1 above, and further in view of Vetro et al. (US-6,490,320 hereinafter, Vetro).

Regarding claim 18, Wang in view of Epstein teaches the limitations of claim 1 above, but differs from the claimed invention by not explicitly reciting the first and second sets of features comprise MPEG-7 descriptors.

In an analogous art, Vetro teaches extracting MPEG-7 descriptors from the digital version of the media sample. (Vetro Col. 4 lines 35-37, Col. 21 lines 57-67 and Col. 22 lines 14-33)

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the recognition system of Wang in view of Epstein

after modifying it to incorporate the MPEG-7 descriptors of Vetro in order to better describe the content within the file in order to simplify searches. (Col. 4 line 64 through Col. 5 line 6) One of ordinary skill in the art would have been motivated to do this since knowing the content of the file enables efficient distribution of the content on a network.

Regarding claim 19, Wang in view of Epstein and Vetro teaches the processor extracts MPEG-7 file information that are lower level but not higher level features and are non-reconstructive of the media sample. (Vetro Col. 4 line 64 through Col. 5 line 6 & Col. 22 lines 30-33)

Regarding claim 20, Wang in view of Epstein and Vetro teaches the extracted features (Vetro Col. 4 line 64 through Col. 5 line 6 & Col. 22 lines 30-33) for which the transmitter is to transmit are non-reconstructive of the media sample. (Vetro Col. 4 line 64 through Col. 5 line 6 & Col. 22 lines 30-33)

8. Claims 23-27, 30, 52 and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang in view of Epstein and Burges et al. (US-2005/0091275 hereinafter, Burges).

Regarding claim 23, Wang teaches a non-transitory computer readable storage medium embodied with a computer program (Wang Col. 7 line 67 through Col. 8 line 24) comprising:

a first set of computer instructions to extract in response to a user input, a first set of lower level but not higher level features from a media sample (Wang Col. 6 lines 14-34 and Fig. 1 [14]), and to extract a second set of lower level but not higher level features consistent with additional features that are requested in the request message,

(Wang Col. 7 line 67 through Col. 8 line 21 *i.e.* receiving the file fingerprints over multiple messages and Col. 21 line 64 through Col. 22 line 50) and

a second set of computer instructions to transmit in separate messages (Wang Col. 7 lines 3-11 and Col. 8 lines 16-21) the first and second sets of extracted lower level but not higher level features over a wireless communication link to a remote service; (Wang Col. 7 line 67 through Col. 8 line 24) and

a third set of computer instructions for receiving a notification of identification of a media corresponding to the media sample from the remote service. (Wang Col. 7 lines 57-59, Col. 16 lines 55-56 and Col. 17 lines 31-34)

Wang teaches the ability to have a sound "continually sampled into a buffer to obtain a record of the previous N seconds of sound" (Col. 21 lines 64-67), which enables multiple fingerprints to be created (Col. 22 lines 19-37) in order to increase the uniqueness of the file so that the song can be recognized (Col. 22 lines 1-17 & 38-50), with the apparatus (which contains the non-transitory computer readable storage medium) performing the fingerprinting process (Col. 22 lines 29-33), but differs from the claimed invention by not explicitly reciting receiving a request message that requests at least one additional feature and responsive to the request message to extract a second set of features from the media sample and the transmitter is further to transmit the extracted second set of lower level but not higher level features for any necessary higher level feature extraction for matching in conjunction with the first and second sets of lower level features.

In an analogous art, Epstein teaches that it is well known in speech recognition systems, ambiguity in returned results can be solved by requesting additional information. (Col. 4 lines 25-27)

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to be motivated to implement the music identification system of Wang after modifying it to incorporate the ability to request additional information to resolve ambiguity of Epstein as an alternative to continually sampling and creating fingerprints of Wang since only performing the additional fingerprinting upon request saves processing power on the small portable device and reduces the amount of transmissions being sent to the recognition server, both of which save battery power of the small portable device, while still enabling less distinctive songs to be recognized.

Wang in view of Epstein differs from the claimed invention by not explicitly reciting a higher level feature extraction for matching in conjunction with the first and second sets of lower level features.

In an analogous art, Burges teaches a method and system for matching duplicate songs in a database (Abstract) that includes a lower level feature extraction (Fig. 1 [Fingerprint Component]) and a higher level feature extraction (Fig. 1 [Normalization Component]) that is used in conjunction with the lower level features for matching. (Page 2 [0023] & Page 5 [0045])

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to be motivated to implement the use of fingerprinting for identifying songs of Wang in view of Epstein after modifying it to incorporate the use of

a higher level extraction for matching songs of Burges since the use of a normalization component enables a mean Euclidean distance to be computed, enabling the distances to be determined between pairs of fingerprints. (Burges Page 5 [0045])

Regarding claim 24, Wang in view of Epstein and Burges teaches the transmitter is further configured to transmit a message that includes the at least one extracted lower level but not higher level feature and no portion of a digital version of the media sample. (Wang Col. 4 lines 23-32 [LPC coefficients and frequency components of spectrogram peaks])

Regarding claim 25, Wang in view of Epstein and Burges teaches the processor is further configured to adaptively select a number of lower level but not higher level features to extract based on a digital version of the media sample. (Wang Col. 4 lines 23-32 [LPC coefficients and frequency components of spectrogram peaks])

Regarding claim 26, Wang in view of Epstein and Burges teaches the processor is further configured to adaptively select at least one type of feature to extract based on the digital version of the media sample, the processor extracts at least one feature of the adaptively selected type, and wherein the transmitter is further configured to transmit an identifier of the selected type of feature. (Wang 4 lines 15-41 and Col. 7 line 3 through Col. 8 line 24)

Regarding claim 27, Wang in view of Epstein and Burges teaches the ability to transmit extracted features and time-bounded segments. (Wang Col. 6 line 61 through Col. 7 line 11)

Regarding claim 30, Wang in view of Epstein and Burges teaches at least one feature defines a timepoint, the first set of computer instructions is to extract at least one timepoint from the media sample, and one of said messages comprises a timepoint, a spectral slice of the media sample and an identifier that links the spectral slice to the timepoint. (Wang Fig. 8A and Col. 6 line 35 through Col. 7 line 36, Col. 8 line 61 through Col. 9 line 32 and Col. 21 lines 13-29)

Regarding claim 52, Wang in view of Epstein teaches the sampling device is a phone or PDA (Wang Col. 7 line 67 through Col. 8 line 5) and it is obvious to one of ordinary skill in the art to recognize that a phone/PDA has buttons that can be configured to initiate the identification of media from the media sample.

Regarding claim 74, Wang in view of Epstein and Burges teaches the transmitter transmits and the receiver receives over a wireless communication link. (Wang Col. 7 line 67 through Col. 8 line 5)

9. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang in view of Epstein and Burges as applied to claim 23 above, and further in view of Vetro et al. (US-6,490,320 hereinafter, Vetro).

Regarding claim 35, Wang in view of Epstein and Burges teaches the limitations of claim 23 above, but differs from the claimed invention by not explicitly reciting the first set of features is non-reconstructive of the media sample.

In an analogous art, Vetro teaches extracting MPEG-7 descriptors from a media sample (Vetro Col. 4 lines 35-37, Col. 21 lines 57-67 and Col. 22 lines 14-33) that are

non-reconstructive of the media sample. (Vetro Col. 4 line 64 through Col. 5 line 6 & Col. 22 lines 30-33)

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to implement the recognition system of Wang in view of Epstein after modifying it to incorporate the MPEG-7 descriptors of Vetro in order to better describe the content within the file in order to simplify searches while avoiding copyright/infringement problems. (Vetro Col. 4 line 64 through Col. 5 line 6) One of ordinary skill in the art would have been motivated to do this since knowing the content of the file enables efficient distribution of the content on a network.

10. Claim 55 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (US-6,990,453 hereinafter, Wang) in view of Epstein as applied to claim 54 above, and further in view of Rhoads et al. (US-7,185,201 hereinafter, Rhoads).

Regarding claim 55, Wang in view of Epstein teaches providing a link, after the remote service identifies the media, to the user that provides information about the media. (Wang Col. 21 lines 30-47), but differs from the claimed invention by not explicitly reciting that, when activated, accesses a music service for downloading the media.

In an analogous art, Rhoads teaches providing a method and system for identifying media that includes providing a link that when activated, accesses a music service for downloading the media. (Rhoads Col. 3 lines 46-58)

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to be motivated to implement the method of identifying songs of

Wang in view of Epstein after modifying it to incorporate the ability to provide a link to download the media once the media has been identified as in Rhoads since not only does providing the ability to download the song help the user, but also provides a reason for the copyright holders to allow mass fingerprinting of their songs (because once the song has been identified, a copy of the song can be sold for profits).

***Allowable Subject Matter***

11. Claims 37, 38, 40, 47 and 56-70 are allowed.
12. The following is an examiner's statement of reasons for allowance:

Applicant's independent claims 37, 56, 57 and 70 each recite, *inter alia*, the ability to extract two sets of lower level features and from the two sets of lower level features, extracting a variable amount (K) higher level features that is extracted in an iterative loop in order to find a unique match. While extracting a higher level feature from a lower level feature is known (Rhoads Col. 3 lines 6-25 and Vetro Col. 4 lines 35-37, Col. 21 lines 57-67 and Col. 22 lines 14-33) and utilizing an iterative loop for reducing ambiguity is known (Barton Page 5 [0048-0049], Page 6 [0059], Page 7 [0067-0068] and Page 11 [0138]), the combination of utilizing an iterative loop for extracting K higher level features from two sets of lower level features appears to be novel.



***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MATTHEW SAMS whose telephone number is (571)272-8099. The examiner can normally be reached on M-F 6:30-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lester Kincaid can be reached on (571) 272-7922. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MATTHEW SAMS/  
Examiner, Art Unit 2617